

Brian Lousdal

Title of the lecture:

Shoulder brace with unique mechanical spherical mechanism. Preliminary Results on Functionality and Pain Reduction with new dynamic supportive orthosis for shoulder instability

Employer/affiliation:

CPO and orthopaedic technician founder and CEO at Bandagist Kompagniet

Brief introduction about the presentation:

As a spin off on a robotic exoskeleton research project, Department of Materials and Production in Aalborg University, developed a spherical mechanism: Compact X-scissors Device (CXD, Joint) This exoskeletal joint moves in a spherical way, allowing no dislocation of the humerus, because it, attached outside the shoulder, centres all movement to one point. The benefits of the CXD joint, ended up in the following project purpose:

“The purpose of the project is to investigate fitting, benefits, and consequences of dynamic orthotics for stabilization and motion of the shoulder and to capture its effect on functionality, muscle activity and pain reduction. Dynamic shoulder stabilization will reduce neurologically impaired patients’ pain and discomfort and will allow the user better range-of-motion, better ability to rehabilitate muscle function, and could improve quality- of-life for the patient groups by enabling activities of daily living. “

The challenge of applying the joint correctly, dealing with soft tissue movement, compliance etc. led to an innovative corporation between university, CPO’s, hospitals, etc. We now have the first Kinematic measurement, and it looks very promising. The study and development of the brace is not at all finished, but I’ll like to present our reflections and results so far, and perhaps get some useful inputs.